

**REMARKS**

The present amendment is filed in response to the Office Action dated April 14, 2009, rejecting pending claims 1-6, 8-15, 17-27, and 29-32.

**I. Claim Amendment:**

For the sake of clarity, claims 4-6 have been amended to remove instances of the word "about" with respect to the recited weight percentages and fiber diameter ranges recited therein. Claim 31 has similarly been amended to remove the word "about" from the recitation of Frazier air permeability. Support for the amendment of claim 4-6 and 31 is provided by the specification. Consequently, no new matter has been added.

**II. Discussion:**

Applicant's invention, as recited by claims 1-6, 8-15, 17-27, and 31-32, as amended, is directed to a paintable gypsum or hydraulic board. In various embodiments, the board exhibits a combination of desirable structural and functional features that render it fire resistant and paintable or otherwise able to be given an aesthetically pleasing finish after installation with a minimum of surface preparation required. The mat has a high permeability, permitting easy extraction of excess water ordinarily present during slurry-based manufacture of gypsum or other hydraulic set board. Surprisingly and unexpectedly, gypsum board faced

in accordance with the invention with the present nonwoven glass fiber mat, wherein the fibers consist essentially of chopped glass fibers having an average fiber diameter ranging from about 9.5 to 12.5  $\mu\text{m}$  and an average fiber length ranging from about 6 to 12 mm, has a smoother surface than boards made with mats employing either larger or smaller diameter fibers. The smoothness of the surface permits the board to be painted directly, without the need for a skim coat of plaster, that heretofore has been required. Elimination of that skim coat markedly improves the efficiency of installation and ultimate finishing of the board, as required for most construction projects.

It is especially surprising and significant that the aforementioned 9.5 to 12.5  $\mu\text{m}$  fibers result in smoother board than that obtained with fibers having a smaller diameter. It is likewise surprising and unexpected that a gypsum board having a facer wherein the average glass fiber diameter is 9.5 – 12.5  $\mu\text{m}$  and the average fiber length is 6 – 12 mm is smoother than board faced with mat having the same diameter but fiber length of 19 mm (3/4").

### III. Rejection under 35 USC §112, first paragraph:

Claims 1-6, 8-15, 17-27, 31, and 32 were rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. The claims are alleged to contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

By way of applicant's amendment filed March 19, 2009, claim was amended 1 to recite a paintable gypsum board, further requiring that the "first facer provide[] said first face of said gypsum board with a smoothness that is sufficient to permit said gypsum board to be directly paintable." Claim 27, directed to an improved gypsum board, and claim 32, directed to a paintable hydraulic set board, were similarly amended.

Pointing to these limitations, the Examiner has contended that "Applicant's specification as originally filed does not provide support for a paintable board and a smoothness sufficient to permit the board to be directly paintable."

In making the amendment to claims 1, 27, and 32 in the March 19 submission, applicant pointed, with specificity, to the original specification as providing support, particularly citing page 6, lines 9-11, and page 7, lines 11-14. Applicant continues to maintain that the specification, especially in the sections already cited, provides the support for the amended claims required by 35 USC 112.

The foregoing sections of the specification teach the following:

As a result of the selection of fibers in the facing, the board has a smooth, uniform surface that readily accepts paint or other surface treatments to provide a pleasing aesthetic appearance.

[page 6, lines 9-11, emphasis added]

The board is advantageously ready for painting, but other finishing forms such as plaster, wallpaper or other known wall coverings may also be applied with a minimum of surface preparation.

[page 7, lines 11-14, emphasis added]

Applicant further points to teaching in the section "Description of the Prior Art," especially at page 4, lines 6-9, contrasting the deficiencies of prior art, fiber-faced gypsum board:

For example, the surface roughness of current fiber-faced boards makes them difficult to finish satisfactorily by normal painting, because the texture of the mat remains perceptible through the paint.

[page 4, lines 6-9, emphasis added]

Applicant also teaches that visual comparison under obliquely incident light is a sufficient basis for comparing the relative smoothness of different construction boards:

Although some of these attributes may be quantified somewhat using image analysis techniques, visual comparison, especially under obliquely incident light, is more than sufficient for comparing the relative smoothness of different surfaces.

[page 4, lines 15-18]

Applicant makes an express connection between the smoothness of the present board and the paintability of the present board in contrast to previous boards, in which paintability required additional surface preparation to mitigate the unacceptable presence, even in board after painting, of surface texture arising from the underlying fiber structure.

Even after painting, these defects and the underlying fibrous texture remain perceptible and aesthetically unappealing. As a result, a uniform, smooth finish can be achieved only in conjunction with a prior ameliorative treatment. Typically it is necessary to skim coat the surface with drywall joint compound or the like and then sand to a requisite smoothness to achieve a surface that will accept paint satisfactorily. This treatment must be accomplished at the construction site, resulting in added labor and materials cost.

[page 4, lines 20-27]

Based on the foregoing disclosures found in the specification as filed, applicant respectfully maintains that the invention delineated by claims 1-6, 8-15, 17-27, 31, and 32 has been described in sufficient detail such that a person having ordinary skill in the pertinent art would recognize that applicant did, in fact, have possession of the invention as of the filing date, thereby satisfying the written description requirement of 35 USC 112, first paragraph.

Applicant further maintains that the present statement of rejection is at best conclusory, thus falling short of the showing required. As articulated by the Federal Circuit in *In re Alton*, 76 F.3d 1168, 37 USPQ2d 1578, 1583 (1996),

If the applicant claims embodiments of the invention that are completely outside the scope of the specification, then the examiner or Board need only establish this fact to make out a prima facie case. If, on the other hand, the specification contains a description of the claimed invention, albeit not *in ipso verbis* (in the identical words), then the examiner or Board, in order to meet the burden of proof, must provide reasons why one of ordinary skill in the art would not consider the description sufficient. (Citing *In re Wertheim*, 541 F.2d at 263, 264; 191 USPQ at 97, 98 (C.C.P.A. 1976).

[page 6, lines 9-11]

In the present instance, applicant maintains that the above-quoted portions of the specification clearly provide direct correspondence for the claim limitations of "paintable gypsum board" and "a smoothness sufficient to permit the board to be directly paintable." This direct correspondence obviates any contention that the claimed embodiments are "completely outside the scope of the specification," rendering inapposite the first alternative of *Alton*. Therefore, the mere statement that the pertinent limitations are not present in the specification is insufficient to predicate a prima facie failure to satisfy the written description

requirement. Rather, applicant maintains that to establish a prima facie case under 35 USC 112, first paragraph, the Examiner must satisfy *Alton*'s second alternative, which he has not done. Nothing in the present written description rejection even establishes the level of ordinary skill in the art. Even less does the rejection articulate a basis on which the skilled person would view applicant as not being in possession of the claimed invention.

Accordingly, reconsideration of the rejection of claims 1-6, 8-15, 17-27, 31, and 32 under 35 USC 112, first paragraph, as failing to comply with the written description requirement, is respectfully requested.

**IV. Rejection under 35 USC §112, second paragraph:**

Claims 1-6, 8-15, 17-27, 31, and 32 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner has alleged that the scope of claims 1-6, 8-15, 17-27, 31, and 32 is unclear, inasmuch as the specification does not provide objective and/or quantitative characteristics which describe a "smoothness that is sufficient to permit the board to be directly paintable." To the contrary, applicant points to the above-quoted recitations at page 4, lines 6-9, 15-18, and 20-27, which indicate the deficiency of prior art fiber-faced construction boards, in which "defects and the underlying fibrous texture remain perceptible and aesthetically unappealing" even after painting, and the contrasting behavior exhibited by

the present mat and board. Accordingly, it is submitted that the skilled person would recognize that the requisite smoothness and paintability are discernable by observing whether or not the surface is smooth enough that the underlying fibrous texture of the mat facer is not readily perceived after gypsum board employing that facer is painted so as to render the surface aesthetically objectionable.

With respect to claims 4-6 and 31, the Examiner has pointed to the phrase "at least about" with respect to weight percentages and permeability as rendering the claim limitations indefinite. Each of these claims has been amended to remove the word "about." It is submitted that any indefiniteness resulting from this word has thereby been obviated.

Accordingly, reconsideration of the rejection of claims 1-6, 8-15, 17-27, 31, and 32 under 35 USC 112, second paragraph, as failing to comply with the written description requirement, is respectfully requested.

**V. Rejections under 35 USC §103(a):**

Claims 1-6, 8-15, 17-19, 21-24, 26-27, and 31-32 stand rejected under 35 USC 103(a) as being unpatentable over US Patent 5,772,846 to Jaffee ("Jaffee '846"), which provides a thermoformable nonwoven fibrous mat having properties said to make it particularly suited for a facer on insulating gypsum board.

Applicant respectfully submits that Jaffee '846 fails even to recognize the possibility of a gypsum or like construction board that is faced with a non-woven, glass-fiber mat, yet has a

surface that smooth enough to be directly paintable without the need for extensive surface preparation, such as the supplemental application of a skim coat of plaster or similar material. Absent this recognition, a skilled artisan would not be led to the present facer materials for gypsum or other hydraulic set board.

The Examiner has admitted that Jaffee '846 fails to teach the particular ranges of average fiber diameter between 9.5 and 12.5  $\mu\text{m}$  and the average fiber length between 6 and 12 mm, as required by applicant's claims, but has contended that in the absence of unexpected results, it would have been obvious to a skilled person to optimize the foregoing physical characteristics. The Examiner has further alleged that applicant's assertion that the smoothness of the present gypsum board is a surprising and unexpected result is mere unsupported argument. Applicant respectfully disagrees, and points to the comparative examples set forth both in the original specification and in the Declaration Under 37 CFR 1.132 by Alan M. Jaffee dated April 26, 2006 and entered May 3, 2006, and particularly to ¶17, wherein it is averred that a skilled person:

would regard it as surprising and unexpected that a non-woven mat comprised of glass fiber having an average fiber diameter of 11  $\mu\text{m}$  would produce gypsum board having a higher smoothness than boards made with mats having average fiber diameters of 13 and 8  $\mu\text{m}$ . Instead, such a skilled artisan would have inferred that the smoothest surface would result from fabricating gypsum board with mat having the smallest fiber diameter.

It is respectfully submitted that a declaration by a person having at least ordinary skill in the art constitutes objective evidence which cannot properly be dismissed as being mere



unsupported argument. The qualifications of the present Declarant, including those set forth at ¶1, are clearly sufficient to establish him as having at least ordinary skill.

Applicant further counters the Examiner's apparent view that the present claim merely represents the claiming of a new use, new function, or unknown property which is inherently present in the prior art. As best understood by applicant, the Examiner is asserting that the claimed smoothness is an inherent property of prior art, fiber-faced gypsum boards.

It is respectfully submitted this argument is unavailing. It is settled law that an inherency argument must be grounded in certainty, not probability. As articulated by the Federal Circuit in *In re Anthony et al.*, 169 F.3d 743, 745; 49 U.S.P.Q.2D (BNA) 1949 (Fed. Cir. 1999):

To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.' *Continental Can Co. v. Monsanto Co.* 948 F.2d 1264, 1268, 20 U.S.P.Q.2D (BNA) 1746, 1749 (Fed. Cir. 1991). 'Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' *Id.* at 1269, 20 U.S.P.Q.2D (BNA) at 1749 (quoting *In re Oelrich*, 666 F.2d 578, 581, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981))."

In the present instance, the Examiner has not pointed to any species of gypsum board falling within applicant's claimed ranges. Even if, *arguendo*, applicant's ranges are encompassed by broader disclosure in Jaffee '846 or another reference, the very comparative data set forth in the specification and Jaffee Declaration establish that at least some prior art gypsum boards falling within the broad Jaffee '846 disclosure fail to exhibit the requisite

smoothness, thus negating any contention that such property is inherent, as would be required to sustain any rejection based on an inherency theory. Only in light of applicant's own disclosure, and contrary to conventional wisdom (*compare* the Jaffee Declaration at ¶17) is the present smoothness property attained. It is submitted that the Examiner's argument that:

the prior art teaches a substantially similar structure and composition (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the claimed range) as the claimed invention.

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is unavailing, because the present structure is not substantially similar, given the narrow range of fiber diameter and length recited by the claims, which ranges are not taught by the prior art, including Jaffee '846, and the lack of any species of the prior art falling within these ranges.

In view of the amendment of claims 4-6 and 31 and the foregoing remarks, it is submitted that claims 1-6, 8-15, 17-19, 21-24, 26-27, and 31-32, as amended, are novel and unobvious over Jaffee '846.

Accordingly, reconsideration of the rejection of amended claims 1-6, 8-15, 17-19, 21-24, 26-27, and 31-32 under 35 USC 103(a) as being unpatentable over Jaffee '846 is respectfully requested.

Claim 13 was rejected under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of USP 6,187,697 to Jaffee ("Jaffee '697"), which discloses a multiple layer fibrous

nonwoven mat having a body portion and a surface portion. The body portion is said to comprise a mass of nonwoven fibers, with or without particles, bonded together with a resin binder; the surface portion contains fibers and/or particles bonded together with the same said resin binder, the surface portion being substantially-different than the major or body portion of the nonwoven mat. The body portion makes up a major portion of the basis weight (weight per unit area) of the mat while the surface portion makes up a minor portion of the basis weight of the mat. The fibers used for the surface portion are preferably shorter than one-quarter inch and longer than 100 microns.

The Examiner has contended that Jaffee '697 teaches a "substantially similar facer" wherein the glass fibers have an exemplary diameter of 10  $\mu\text{m}$  and an exemplary length of about 0.25 inches. Nowhere does Jaffee '697 teach these features in combination. Instead, applicant respectfully submits that the Examiner has conflated separate disclosures. For example, at col. 2, lines 29-31, Jaffee '697 discloses fibers for the surface portion of his two-layer structure in which the fiber length is preferably 0.25 inches or less. Col. 8, lines 57-60, discloses a control mat made with fibers that have a diameter of 10  $\mu\text{m}$  and a length of 0.5 inch, which length is outside applicant's claimed range of 6-12 mm. Applicant respectfully submits these separate disclosures cannot legitimately be combined, in light of col. 2, lines 24-26, which require the surface portion and the body portion to be different. The disclosure of fiber length at col. 5, lines 30-34 at best provides a wide range of fiber lengths, with the

preferred ranges being much longer (preferably at least one inch, or 25.4 mm) than required by present claims 1, 27, and 32.

Accordingly, reconsideration of the rejection of amended claim 13 under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of Jaffee '697 is respectfully requested.

Claim 20 stands rejected under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of US Patent 6,365,533 to Horner, Jr., et al., which relates to a low fiber, plyable facer suitable for use in insulation board manufacture.

Applicant respectfully observes that the word "gypsum" occurs but once in Horner (col. 3, line 47). However, gypsum is disclosed as a filler useful in a surface coating. Nowhere does Horner in any way contemplate the gypsum board recited by applicant. Rather, Horner is directed exclusively to a "dry, preformed fibrous mat substrate on which is coated a pre-frothed or pre-foamed composition containing a natural or synthetic thixotropic latex polymer, a surfactant and an inorganic mineral filler." Col. 3, lines 3-6. The Examiner has not pointed to any disclosure in Horner that indicates that his facer, whether the preformed mat substrate precursor or the facer after being coated with pre-frothed or pre-foamed composition, has any pertinence to gypsum board manufacture. Thus, applicant maintains that Horner, like Jaffee '846, fails even to recognize the possibility of a gypsum or like construction board that is faced with a non-woven, glass-fiber mat, yet has a surface that smooth enough to be directly

paintable without the need for extensive surface preparation, such as the supplemental application of a skim coat of plaster or similar material.

Applicant respectfully maintains that having failed to recognize the conditions required to provide a paintable surface gypsum board, Jaffee '846 fails to teach the invention recited by claim 20. The Examiner has countered that Horner is not relied on for disclosure of a paintable facer. Rather, the Examiner appears to rely on Horner only for its disclosure of Kraft paper as a facer material, albeit not for gypsum board.

However, Jaffee '846's shortcoming goes far beyond the mere lack of disclosure of a second facer comprising Kraft paper. The structural and functional distinctions between Jaffee's board and the board defined by applicant's claims are set forth hereinabove in connection with the 103(a) rejection of claims 1-6, 8-15, 17-19, 21-24, 26-27, and 29-32 over Jaffee. Clearly, Horner, Jr., et al. does not recognize paintability, and also does not disclose or suggest an average fiber diameter ranging from about 9.5 to 12.5  $\mu\text{m}$ . In this respect the Horner, Jr. et al. teaching does not appreciably add to the Jaffee teaching, and cannot be combined therewith to render obvious the board called for by applicant's claims. Inasmuch as Horner, Jr. et al. does not cure the aforementioned deficiencies of Jaffee, its combination therewith does not render obvious the invention of claim 20.

For these reasons, and those set forth above, it is submitted that the proposed combination of Jaffee '846 and Horner, Jr., et al. does not disclose or suggest the gypsum board recited by present claim 20.

Accordingly, reconsideration of the rejection of claim 20 under 35 U.S.C. 103(a) as being obvious over the combination of Jaffee '846 and Horner, Jr., et al. is respectfully requested.

Claim 25 was rejected under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of US Patent 7,056,582 to Carbo, which discloses acoustical tiles, also known as acoustical panels, ceiling tiles, or ceiling panels, that are said to inhibit the growth of fungus, bacterial and other micro-organism.

Applicant respectfully maintains that Carbo, like Jaffee '846, fails even to recognize the possibility of a gypsum or like construction board that is faced with a non-woven, glass-fiber mat, yet has a surface that smooth enough to be directly paintable without the need for extensive surface preparation, such as the supplemental application of a skim coat of plaster or similar material.

For at least the reasons set forth hereinabove, it is submitted that Jaffee '846 fails to disclose or suggest the claimed invention. Clearly, Carbo, whether taken singly or in combination with Jaffee '846, does not remedy the lack of disclosure or suggestion of a mat imparting direct paintability to the gypsum board made with the present mat, as delineated by amended claim 1, on which claim 25 depends.


Accordingly, reconsideration of the rejection of claim 25 under 35 U.S.C. 103(a) as being obvious over the combination of Jaffee '846 and Carbo is respectfully requested.

**VI. Conclusion:**

In view of the amendment of claims 1, 27, 31, and 32, the cancellation of claims 28-30, and the foregoing remarks, it is respectfully submitted that the present application has been placed in allowable condition. Reconsideration of the rejection of claims 1-6, 8-15, 17-27, and 29-32, and allowance of the present application, as delineated by amended claims 1-6, 8-15, 17-27, and 31-32, are, therefore, earnestly solicited.

Respectfully submitted,

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